APRIL/MAY 2024

CBT51 — GENETIC ENGINEERING

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is reverse transcriptase?
2. Interpret about the types of bond formed while joining DNA fragments.
3. Name any one plant and animal vector.
4. Summarize about plasmid.
5. What is Taq polymerase?
6. Outline the applications of PCR.
7. What is VNTR?
8. Show the two different methods employed in DNA Sequencing.
9. What is recombinant insulin?
10. Summarise about gene library.

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SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Make use of DNA ligase and explain the mechanism of action.

Or

(b) Analyze about polynucleotide kinase and its role in genetic engineering.

12. (a) Show the Construction of cosmid.

Or

(b) Analyze the structure of Ti Plasmid with a neat diagram.

13. (a) Organise the steps involved in the PCR amplification.

Or

(b) Examine the role of primer in PCR.

14. (a) What is 16srRNA? Identify its role as mitochondrial marker.

Or

(b) Analyze the components of DNA barcoding.

15. (a) Examine the production of recombinant hGH by making use of E.Coli.

Or

(b) Analyse the cDNA library.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the tools of genetic engineering with their function in a tabular form.

17. Select yeast and explain how it is utilized as expression vector?

18. Discuss about nested PCR.

19. Discuss about DNA sequencing methods Maxam and Gilbert method.

20. Discuss in detail the screening of Gene Library.

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